

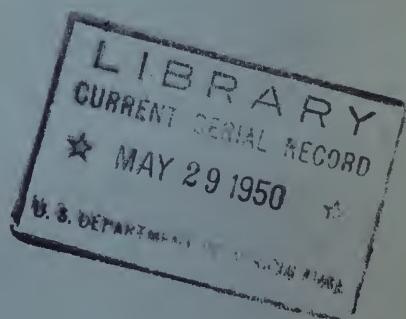
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FEDERAL-STATE COOPERATIVE  
SNOW SURVEYS AND IRRIGATION WATER FORECASTS  
for  
**Platte and Arkansas Drainage Basins**  
By  
Division of Irrigation, Soil Conservation Service  
United States Department of Agriculture  
and  
Colorado Agricultural Experiment Station



Data included in this report were obtained by the agencies named above in cooperation with the U. S. Forest Service, National Park Service, State Engineers of Colorado, Wyoming and New Mexico and other Federal, State and local organizations.

As of  
FEB. 1, 1950



## WATER SUPPLY OUTLOOK

### PLATTE-ARKANSAS DRAINAGE BASIN

February 1, 1950

Snow accumulation to February 1 varied from almost twice normal on the Sweetwater Drainage to about 75 percent of normal on the Arkansas. In the northern Colorado mountains forming the headwaters of the Platte Rivers near normal snow conditions exist. Precipitation during the fall and early winter months has been deficient and except for local areas soil moisture conditions are only fair. On the North and South Platte practically all the reservoirs have more water in storage than a year ago. In many of these reservoirs there is a record carryover from last year.

#### CHEYENNE RIVER

Snow cover in the Black Hills of South Dakota is only about 60 percent of average. Soil moisture is dry except at high elevations and streamflow is also low. January temperatures have been extremely cold. Storage in Belle Fourche Reservoir is now 61,000 acre feet, about one-half of February 1, 1949 and one-third less than the past ten year average.

#### NORTH PLATTE RIVER

On the mountains southwest of Lander on the Sweetwater River watershed the snow cover to this date is unusually high--about twice normal and well in excess of a year ago at this time. A considerably different situation exists on the headwaters of the North Platte River. In this area snow cover in the high mountains is slightly above average. In the North Park area the snow cover is fairly good. At lower elevations on the Platte watershed in eastern Wyoming and western Nebraska fall and winter precipitation has been extremely deficient and soil moisture conditions are described as dry. Irrigation water supplies below the reservoirs are assured due to the record carryover from last season. Storage in the four major reservoirs on the North Platte now totals about 1,625,000 acre feet, one-half million above last year and a million acre-feet over the ten year average. In the Kingsley and Sutherland reservoirs in Nebraska there is now stored about 1,700,000 as compared to 1,600,000 on February 1, 1949.

On the Laramie River the snow cover is similar to the North Platte. The Wheatland area is dry. Reservoir storage is about the same as a year ago.

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#### SOUTH PLATTE RIVER

The water supply outlook for the South Platte and its tributaries is not as favorable as a year ago. Snow cover on all tributaries is substantially less than last February 1. In respect to the past average it varies from about 95 percent on the Poudre, Big Thompson and St. Vrain Rivers to 80 percent on the South Platte above Denver. Precipitation has been below normal over the fall and early winter months and the topsoil is reported to be dry. Streamflow ranges from low near the mountains to normal or above in the lower valley. In most irrigation reservoirs throughout the valley storage is above last year as well as the past ten-year average. There is practically no snow in the valley areas as of this date.

#### ARKANSAS RIVER

On the headwaters of the Arkansas River the snow cover on February 1 is relatively less than elsewhere east of the Continental Divide. On the main stream the snow water content shows about 75 percent of normal and similar conditions exist on the Cucharas, Purgatoire and other tributaries. Precipitation has been extremely deficient during recent months from Pueblo to the state line. Except for John Martin Reservoir, irrigation water storage is down slightly from last year. Stream flow is reported as about 50 percent of average.

## THE SAVANNAH.

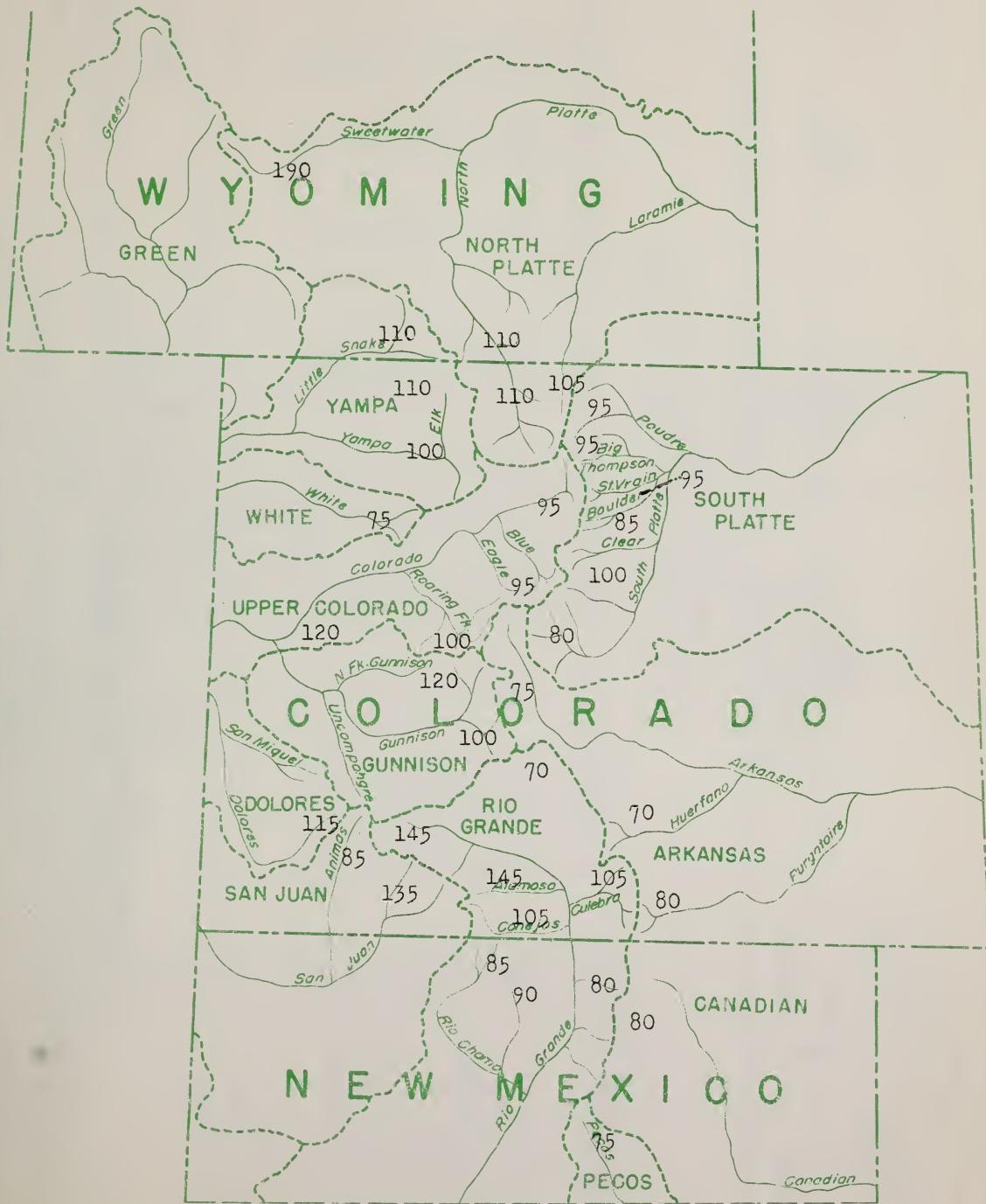
The first day of our stay at the Savanna we were up early, and after a hasty breakfast, went to the river bank to see the animals. We saw a large number of them, including a large herd of antelope, which were very tame, and would run right up to us. We also saw a large number of monkeys, and a few lions. In the afternoon we took a boat trip down the river, and saw many more animals, including a large number of monkeys, and a few lions. In the evening we had a picnic dinner, and then went to bed early.

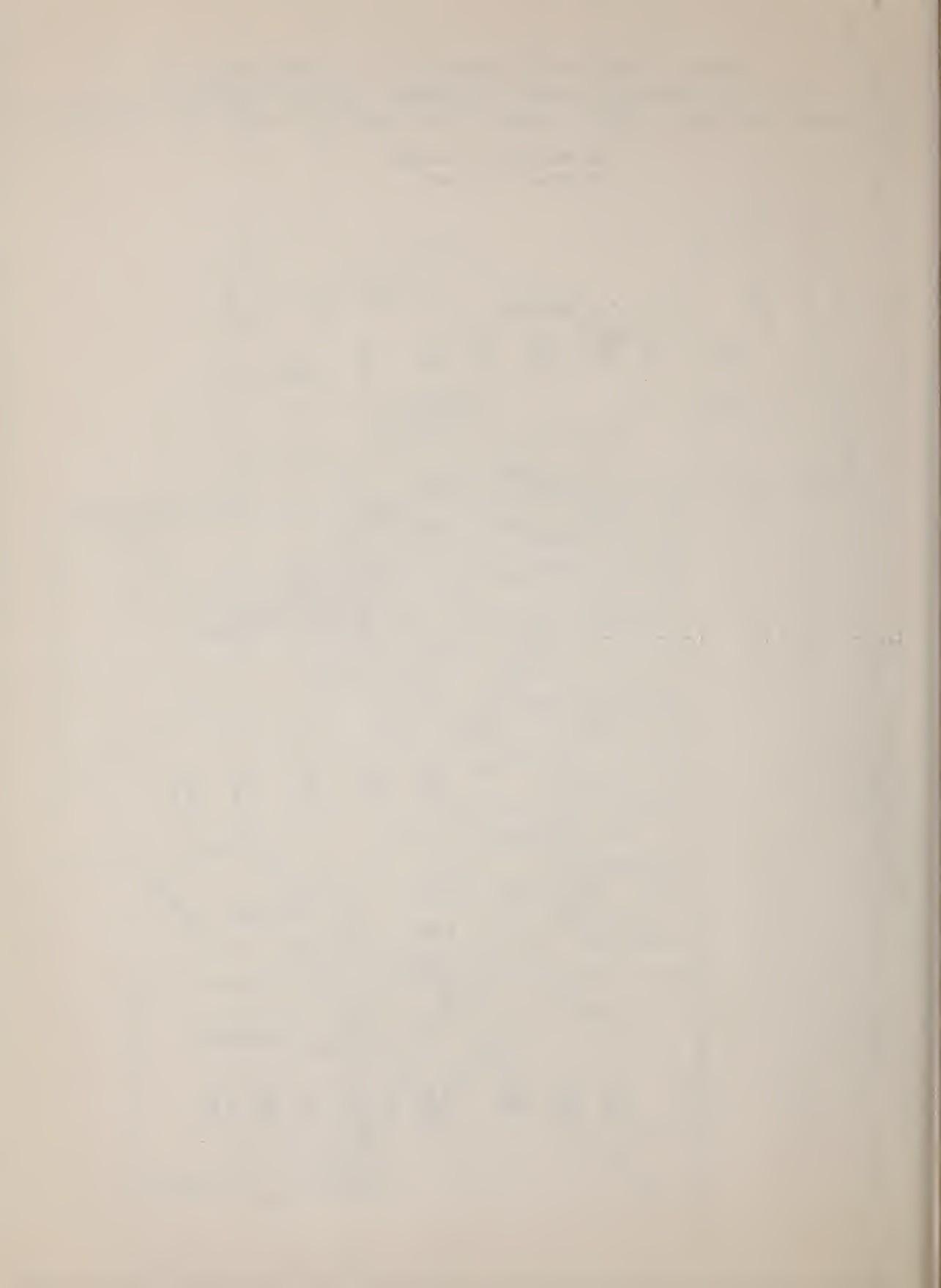
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WATER CONTENT OF SNOW ON THE WATERSHEDS OF  
PLATTE, ARKANSAS, UPPER COLORADO AND RIO GRANDE BASINS  
BASED ON SNOW SURVEYS MADE APPROXIMATELY FIRST DAY OF MONTH

In Percent of Normal  
February 1, 1949





SUMMARY OF FEBRUARY 1 SNOW SURVEYS AND COMPARISON OF DATA  
WITH THAT OF PREVIOUS YEARS BY WATERSHEDS

PLATTE-ARKANSAS DRAINAGE BASINS

WATERSHEDS	Number Courses in percent of Snow Depth Fourteen Year avg.* 1949 1950 Water Content Fourteen Year avg.* In. In. In. In. In. In.										1950 Water Content in percent of Fourteen year avg.*				
	Fourteen Year Avg.*					Fourteen Year avg.*					Fourteen Year avg.*				
	In.	In.	In.	In.	Average	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
CHEYENNE RIVER	20.6	31.0	12.6	3.7	6.5	2.2	3	18	Percent	Percent	17	59	34		
Cheyenne River	20.6	46.6	57.7	8.2	11.6	15.5	2	24	Percent	Percent	27	189	133		
PLATTE RIVER		56.3	43.8	10.7	17.0	11.7	10	26	21	21	27	109	69		
Sweetwater	42.0	42.0	30.2	7.2	10.0	7.6	6	26	24	24	25	105	72		
North Platte River	28.9	42.0	13.4	3.7	5.7	3.0	3	18	22	22	22	81	53		
Laramie River	20.8	27.4	12.5	3.3	6.9	1.7	1	22	26	26	14	52	25		
South Platte River*	20.8	25.9	26.5	7.7	12.4	7.3	4	27	32	32	28	95	59		
Crow Creek	14.9	38.9	38.5	9.5	15.1	9.0	2	25	31	31	23	95	60		
Poudre River	28.5	48.8	37.4	7.0	14.4	8.4	1	24	33	33	23	118	58		
Big Thompson River	37.8	43.2	23.1	6.4	7.2	5.4	2	28	25	25	23	84	75		
St. Vrain River	29.3	43.2	35.9	8.4	11.8	8.3	2	24	29	29	23	99	70		
Boulder Creek	23.2	28.8	22.9	5.9	7.8	4.4	9	21	24	24	19	75	56		
Clear Creek	35.2	40.9	35.9	8.4	11.8	8.3	2								
ARKANSAS RIVER	27.6	32.8	22.9	5.9	7.8	4.4	9	21	24	24	19	75	56		

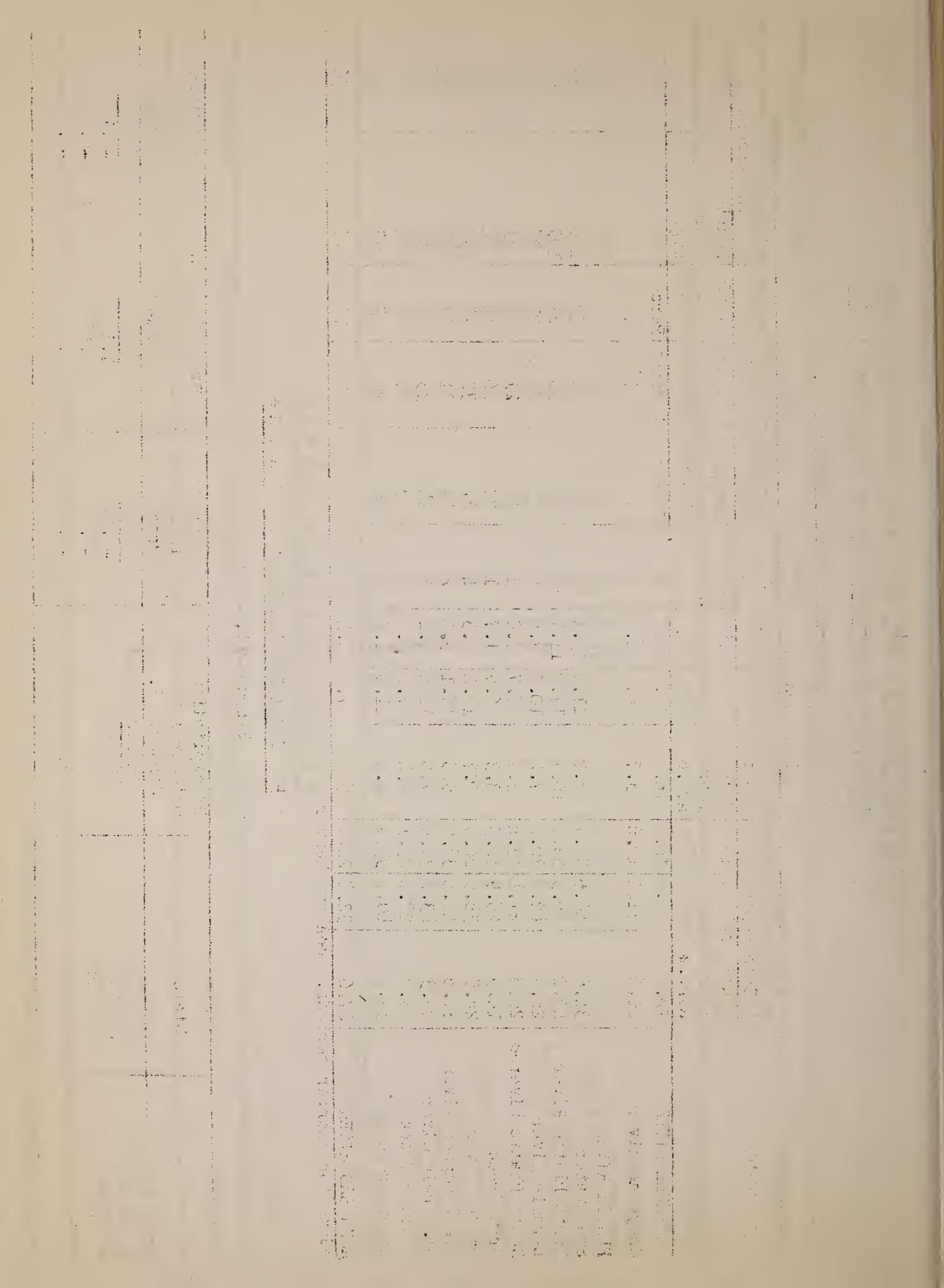
\*Some for shorter periods. \*\*Above Denver

PRECIPITATION DATA \*

February 1, 1950

WATERSHED	State	Precipitation October 1 to January 31.	Departure from Normal		Precipitation January	Departure from Normal
			Inches	Inches		
North Platte	Wyoming	4.13	+0.61	1.15	1.15	+0.23
South Platte	Colorado	2.68	-0.86	0.80	0.80	+0.12
Arkansas	Colorado	2.73	-1.45	0.69	0.69	-0.24

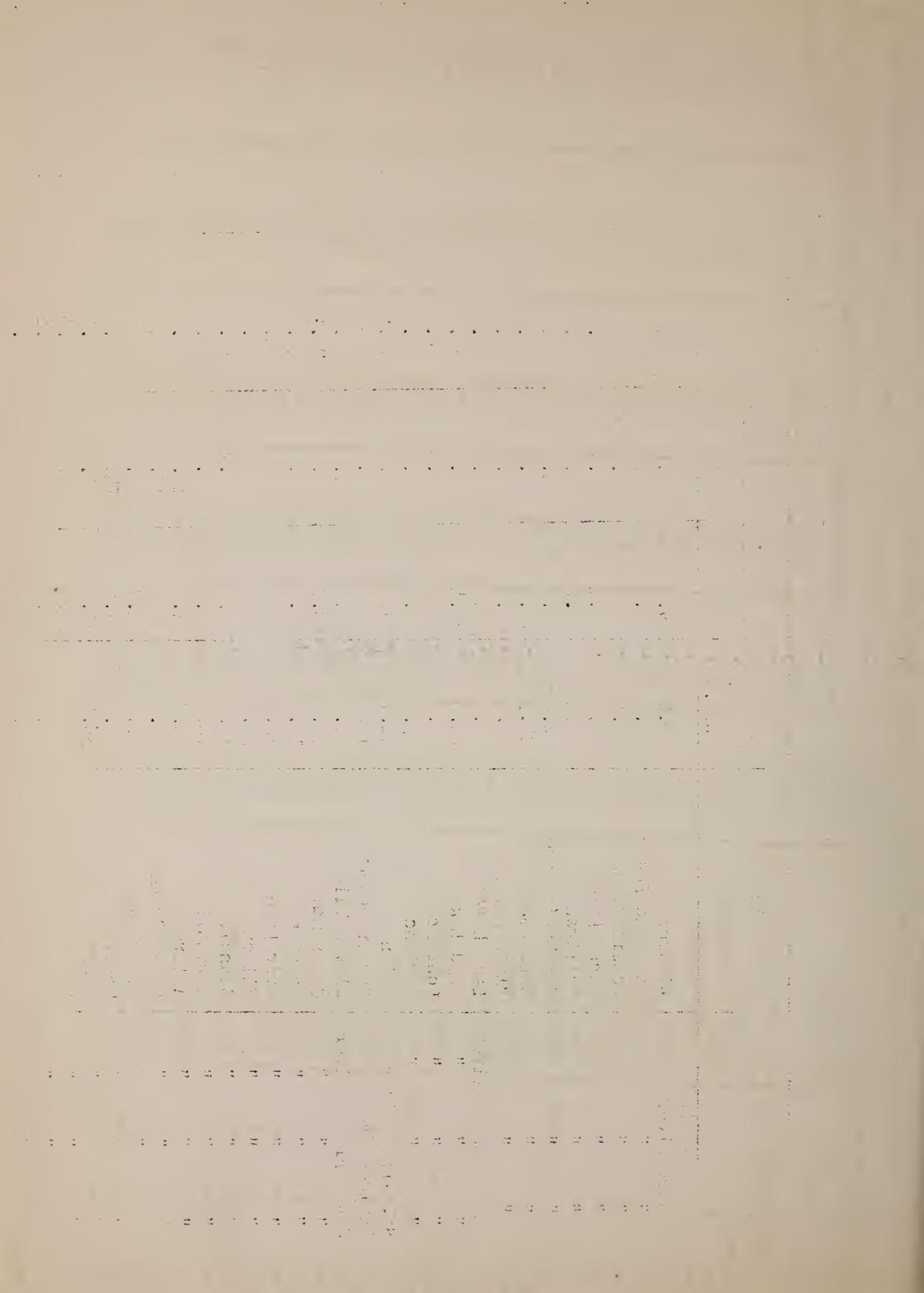
\*Average Selected High Elevation Stations



## STATUS OF RESERVOIR STORAGE, PLATTE-ARKANSAS BASIN, February 1, 1950

BASIN AND STREAM	RESERVOIR	USABLE CAPACITY (Thous. A.F.)	THOUSANDS ACRE FEET IN STORAGE About February 1				10-year Avg.* 1939-1948
			1950	1949	1948	1947	
MISSOURI RIVER							
Poudre River	Windsor	18.6	2.2	11.6	7.7	9.0	
"	Cache la Poudre	9.5	2.3	4.3	5.2	5.6	
"	Fossil Creek	11.6	3.5	8.1	7.1	6.2	
"	Terry Lake	8.2	4.1	4.0	4.1	4.0	
"	Halligan	6.4	0.0	0.0	3.0	1.5	
"	Chamber's Lake	8.8	1.8	1.1	2.4	2.8	
"	Cobb Lake	34.3	11.4	3.9	5.2	4.1	
"	Black Hollow	8.0	5.1	2.3	4.3	3.6	
Big Thompson River	Lake Loveland	14.3	5.7	1.5	6.5	0.0	
"	Boyd Lake	44.0	25.4	20.5	30.1	4.4	4.8
"	Lone Tree	9.2	5.1	3.3	8.0	7.6	5.5
"	Mariano	5.4	1.5	0.2	2.1	0.7	1.4
St. Vrain River	Union	12.7	9.1	6.1	10.6	5.5	6.9
Boulder Creek	Barker Meadow	11.7	4.6	—	—	0.0	4.3
South Platte River	Eleven Mile	81.9	81.9	81.9	81.9	78.7	
"	Cheeseman	79.0	63.0	51.8	77.3	49.5	63.7
"	Marston	18.9	14.8	11.8	14.0	16.0	15.3
"	Barr Lake	32.2	20.1	24.3	24.3	25.4	17.6
"	Milton	24.4	14.5	11.2	15.5	24.4	10.1
"	Standley	18.5	6.7	8.2	13.0	18.5	10.6
"	Marshall	10.3	1.2	0.3	2.3	2.0	2.3
"	Antero	33.0	21.0	19.8	21.0	20.0	13.5
"	Horse Creek	20.6	10.2	10.9	12.5	12.5	7.5
"	Riverside	57.5	44.7	28.1	53.2	53.9	38.4
"	Empire	37.7	27.6	24.7	28.6	27.5	20.8
"	Jackson Lake	35.4	31.5	21.5	27.4	26.5	27.3
"	Prawitt	32.8	28.8	16.4	30.6	24.5	19.8
"	Poirt of Rocks	70.0	60.6	30.1	67.8	44.2	45.1
"	Julesburg	28.2	20.1	20.4	20.7	20.3	20.3

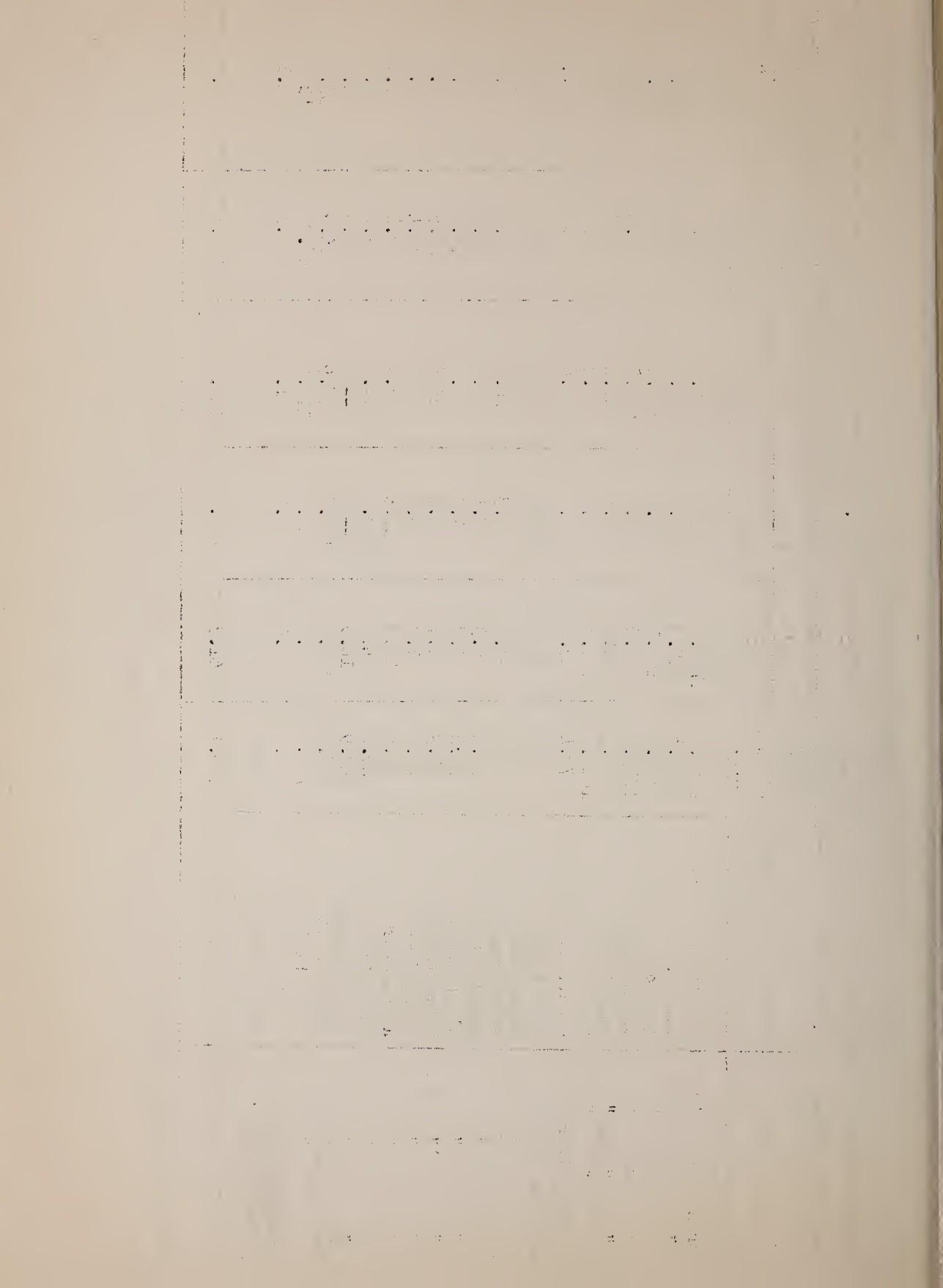
\*Some for shorter periods



RESERVOIR STORAGE, Cont.

RIVER AND STREAM	RESERVOIR	USABLE CAPACITY (Thous. A.F.)	THOUSANDS ACRE FEET IN STORAGE About February 1			
			1950	1949	1948	1947
North Platte River	Kingsley-Sutherland	2180.0	1716.0	1597.4	1544.0	1164.3
"	Minatare	60.8	25.3	16.1	18.8	19.2
"	Alcova	190.0	155.1	129.1	109.3	83.3
"	Seminole	1025.0	6147.2	520.5	685.5	380.0
"	Guernsey	46.0	45.9	15.6	41.4	42.2
"	Pathfinder	1045.5	780.0	407.2	502.3	353.0
Laramie River	Wheatland	70.4	43.9	27.8	69.6	21.8
ARKANSAS RIVER	Twin Lakes	57.9	21.9	22.3	36.8	20.6
Arkansas River	Sugar Loaf	17.4	6.3	7.4	10.3	7.5
"	Clear Creek	11.4	6.7	7.3	9.0	11.4
"	Meredith	41.9	5.7	14.6	26.6	26.5
"	Horse Creek	26.9	7.3	9.1	17.4	17.4
"	Adobe Creek	61.6	29.8	30.3	43.7	28.4
"	Cucharas	40.0	4.5	8.2	17.3	2.2
"	Two Buttes	40.9	18.9	--	--	5.9
"	John Martin	655.0	149.6	128.8	35.9	46.9
"	Great Plains	150.0	68.6	89.5	110.9	56.0
Purgatoire River	Model	15.0	0.6	1.5	1.5	2.1
CHEYENNE RIVER	Belle Fourche	198.1	61.3	116.5	140.0	140.6
Cheyenne River						92.7
						661.7
						22.2
						53.9
						276.3
						35.5
						235.8
						31.5
						27.6
						8.2
						6.3
						20.5
						8.8
						29.6
						6.8
						8.3
						33.3
						43.4
						4.1

\*Some for shorter periods

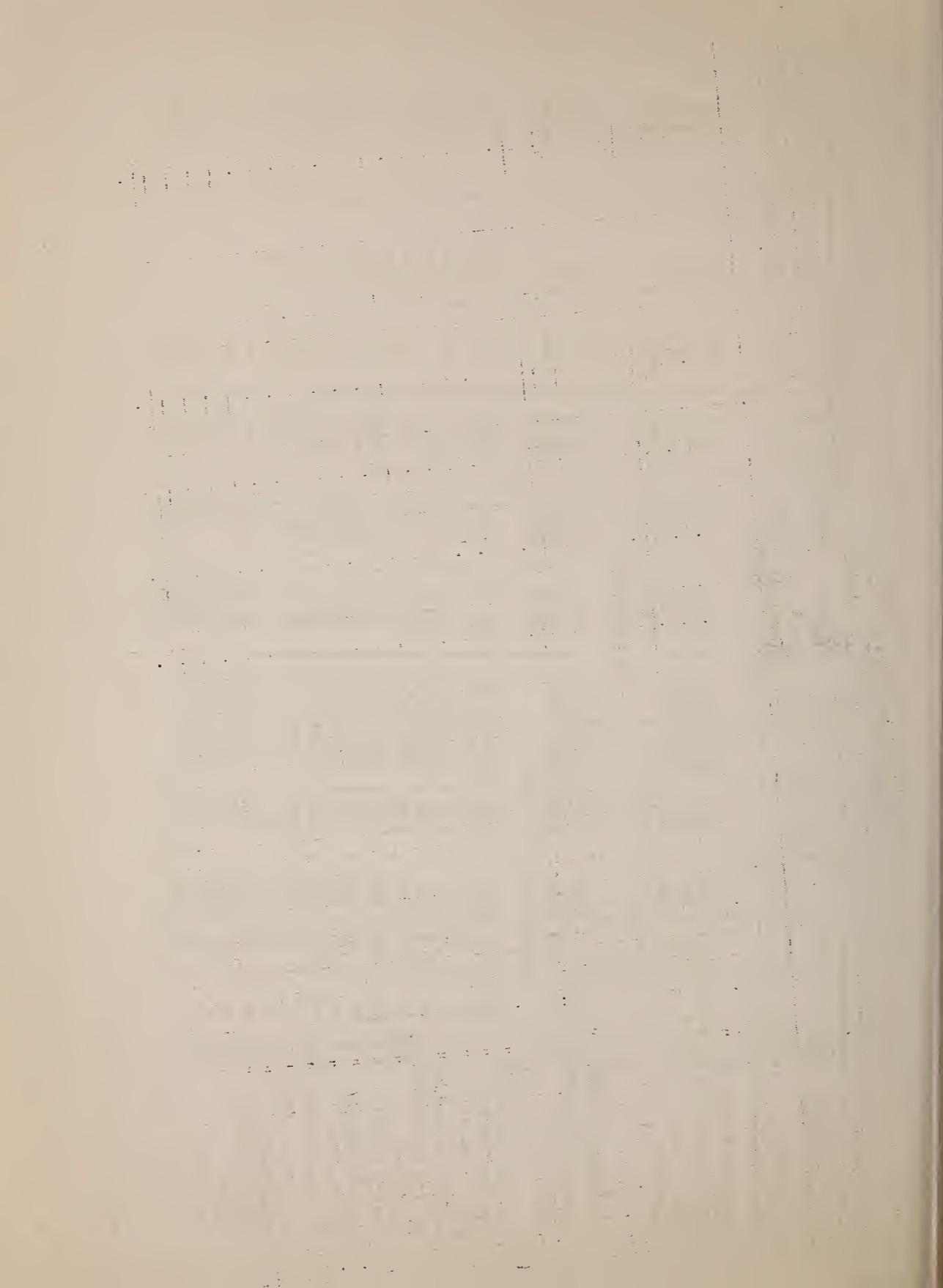


## PLATTE-ARKANSAS RIVERS SNOW SURVEYS

February 1, 1950

Drainage Basin and Snow Course	No. and State	Location			Snow Cover Measurements			Past Record Av. Water Con- tent (Inches)
		Sec. Temp.	Range	Elev.	Date of Survey (Inches)	Water Content (Inches)	Yrs. of Rec.	
CHEYENNE RIVER								
Upper Spearfish	1 S.Dak.	21	3N	1E	6500 2/1	13.0	2.0	4.7
Upper Castle	2 "	24	2N	1E	6800 2/1	17.9	3.1	3.9
Deerfield	2 "	23	1N	2E	6000 1/30	6.8	1.6	2.6
	Average for Drainage					2.2	4.3	3.7
SWEETWATER RIVER								
Grannier Meadows	29 Wyo.	19	30N	100W	9000 1/27	59.2	16.2	8.4
South Pass*	47 "	13	30N	101W	9000 1/27	56.2	14.8	8.0
	Average for Drainage					57.7	12.2	8.2
NO. PLATTE RIVER								
Cameron Pass	1 Colo.	2	6N	76W	10300 1/26	44.1	12.3	11.7
Park View	7 "	24	5N	78W	9200 1/25	30.7	6.1	5.4
Columbine Lodge	8 "	21	5N	82W	9300 1/26	43.1	11.0	13.4
Willow Cr. Pass*	62 "	1	4N	78W	9500 1/25	38.4	8.4	7.4
Northgate	136 "	8	1N	79W	8500 1/25	15.7	2.9	--
Bottle Creek	7 Wyo.	24	14N	85W	8200 1/24	37.7	11.0	7.5
Webber Spring	8 "	27	14N	85W	9000 1/24	49.3	13.5	9.8
Old Battle	9 "	29	14N	85W	9800 1/24	75.0	22.6	17.9
N.French Creek	37 "	27	16N	80W	10200 1/31	56.7	16.3	16.1
N.Barrett Creek	38 "	30	16N	80W	9100 1/31	40.6	10.3	11.5
Ryan Park	39 "	34	16N	81W	8400 1/31	25.2	5.5	6.6
Spring Creek	67 "	32	15N	85W	9000 1/30	46.2	14.1	--
Albany	68 "	18	14N	78W	9400 1/28	30.2	7.4	--
La Bonte	69 "	11	27N	74W	8450 1/28	15.3	3.3	--
Boxelder	70 "	31	30N	75W	9000 1/28	11.3	1.4	--
	Average for Drainage					43.8	11.7	10.7

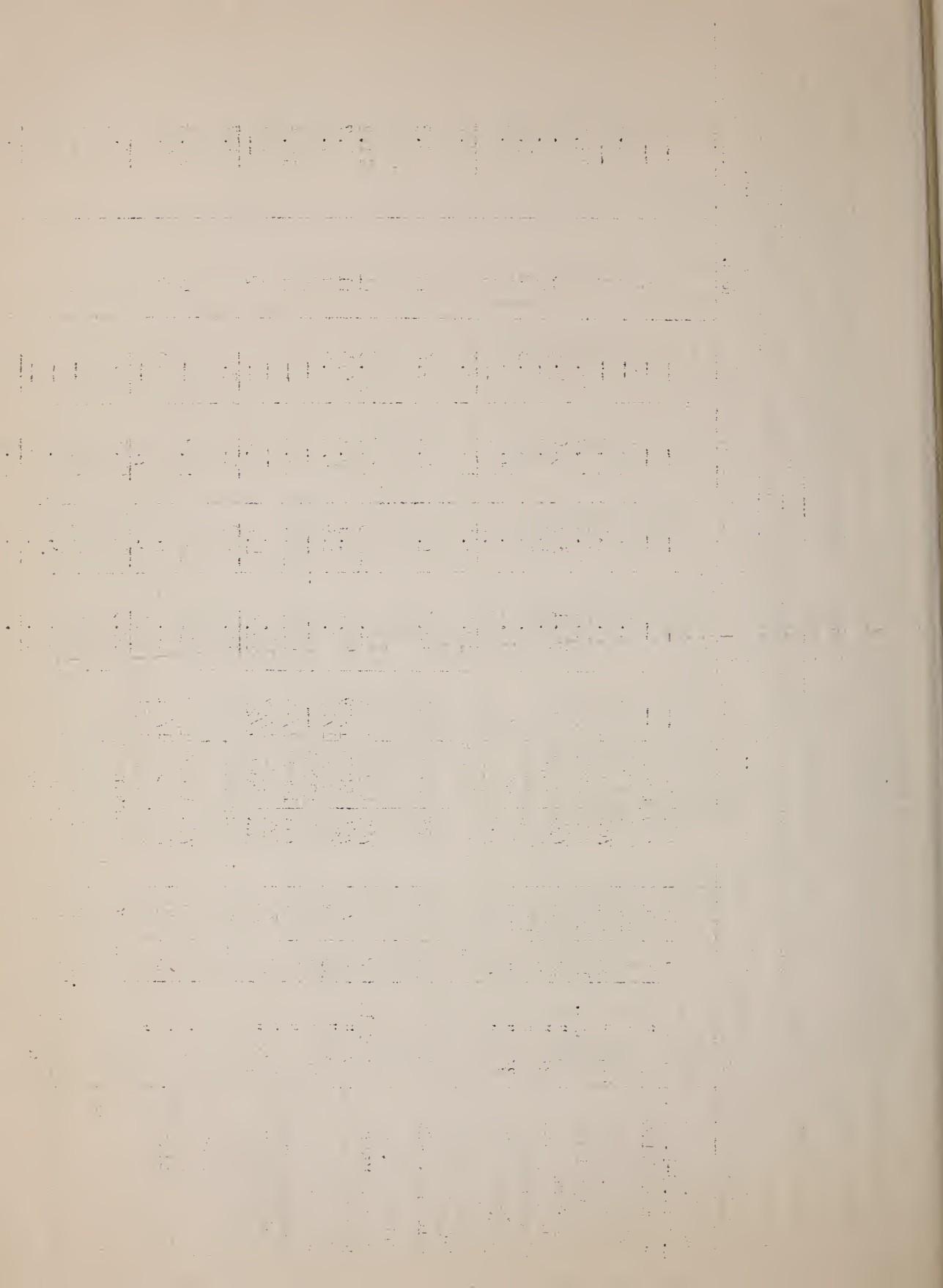
\*On adjacent drainage



PLATTE-ARKANSAS RIVERS SNOW SURVEYS  
February 1, 1950

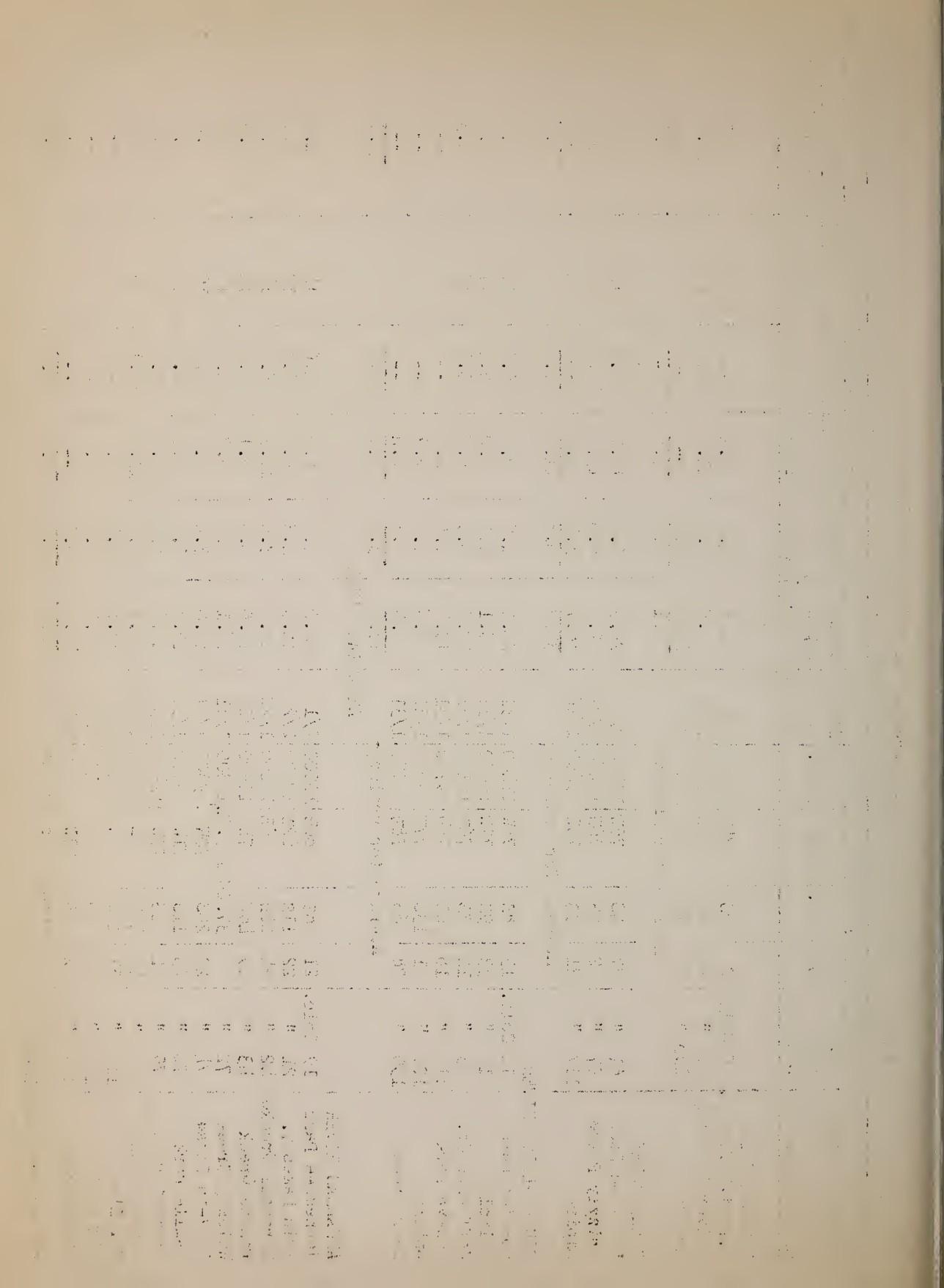
Drainage Basin and Snow Course	Location				Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Yrs. of Rec.	Snow Cover Measurement	Past Record
	No. and State	Sec	Twp	Range	Elev.					
LARAMIE RIVER W. Port. G-P.Tun., Deadman Hill*	4 Colo. 50 "	7 26	8N 10N	75W 75W	8600 10200	-- --	-- --	-- --	9 10	-- --
Roach	88 "	5 35	10N 10N	77W 76W	9800 9100	1/25 1/29	40.6 28.0	9.8 5.6	10.1 10.5	10.1 --
McIntyre	111 "	11	16N	79W	10200	1/31	51.2 15.7	15.4 19.7	12 12	13.8 13
Brooklyn Lake	3 Wyo. 11 "	21 35	13N 15N	78W 72W	9200 8700	2/1 1/31	16.1 12.5	3.1 1.7	13.0 8.9	4.5 4.6
Fox Park pole Mtn. #2*	34 "	29 24	16N 16N	78W 79W	8700 9500	1/31 1/31	29.8 31.1	7.5 8.0	12 12	3.3 6.3
Libby Lodge	36 "	18	14N	78W	9400	1/28	30.2 30.2	7.4 7.6	12 12	6.3 7.2
Hairpin Turn	68 "	Average for drainage					30.2 30.2	7.6 7.6		7.2
Albany								10.0 10.0		
CROW CREEK Pole Mtn. #2*	34 "	35	15N	72W	8700	1/31	12.5	1.7	6.9 2.6	3.3
POUDRE RIVER Cameron Pass	1 Colo. 2 "	2 6 33	6N 7N 8N	76W 75W 75W	10300 9000 8600	1/26 1/29 1/29	41.1 15.2 18.5	12.3 4.1 1.9	13.5 6.4 4.5	11.7 4.7 1.6
Chambers Lake	3 "	26	10N	75W	10200	--	--	--		
Big South	50 "	8	5N	75W	10600	1/29	41.3 22.8	10.7 3.9	10 11	12.6 3.9
Deadman Hill	65 "	18	7N	73W	9500	1/29	18.9 26.5	4.6 7.3	2 2	-- --
Lake Irene*	68 "	26	10N	74W	9000	1/28	-- 26.5	9.0 7.6		7.7
Hour Glass Lake	128 "	Average for drainage								
Red Feather										
BIG THOMPSON RIVER Lake Irene*	65 "	8	5N	75W	10600	1/29	41.3 34.8	10.7 7.3	11 11	12.6 6.4
Hidden Valley	95 "	23	5N	75W	9550	1/31	17.4 38.5	3.0 9.0	7.3 7.3	-- --
Deer Ridge	115 "	19	5N	73W	9050	1/31	-- 38.5	7.5 9.0		9.5
ST. VRAIN RIVER Wild Basin	41 Colo. 116 "	24 21	3N 3N	74W 73W	10000 8600	2/2 2/1	37.4 15.0	8.4 3.8	14.4 6.5	7.0 --
Copeland Lake	134 "	1	1N	73W	9500	1/30	12.2 37.4	2.2 8.4	12 12	-- --
Ward										

\*On adjacent drainage



PLATTE-KANSAS RIVERS SNOW SURVEYS  
[February 1, 1950]

\*On adjacent drainage





Federal - State - Private

COOPERATIVE SNOW SURVEYS

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Furnishes the basic data  
necessary for forecasting  
water supply for irrigation,  
domestic and municipal water  
supply, hydro-electric power  
generation, navigation,  
mining and industry

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"WATER IS THE WEST'S GREATEST RESOURCE"